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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *28 July 2006*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-17* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-17* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some * c) ☐ None of:

      1. ☒ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/28/06*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

1.   This office action has been examined. Claims 1-17 are pending.

Claim Objections

2.   Claim 1 objected to because of the following informalities: The word "server" has been misspelled in line 7 as "sewer". Appropriate correction is required.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The claimed invention is directed to non-statutory subject matter. Claims 13-17 is non-statutory according to 35 U.S.C. 101. Claim recites a pool user device for making use of server function in support of a service, which is a series of merely software modules. Thus, a device (i.e., pool of user device) comprising merely software modules renders the claimed pool of user device software per se. Thus, claim is non statutory. For a device to fall with in a category of statutory class of invention should comprise/recite at least one hardware/physically tangible unit.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the

obligation under 37 CFR 1.56 to point out the inventor and invention dates of each

claim that was not commonly owned at the time a later invention was made in order

for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35

U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6.   Claims 1, 2, 4-9, 10, 12-17 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Lakshmi Narayanan et al. (US 2003/0115259) in view of Parham

et al (7,035,922).

        Re Claim 1, Lakshmi Narayanan et al. discloses a method of providing a reliable

server function in support of a service, such as internet-based applications, the method

comprising: forming a server pool with one or more pool elements (Para 16 lines 1-5),

each of the pool elements being capable of supporting the service, providing at least

one name server for managing and maintaining a name space for the sewer pool (Para

18 lines 1-7), the name space comprising a pool name identifying the sewer pool

(Para 18 lines 7-11), sending, by a pool user for making use of the service, a request to

the name server indicating the pool name, resolving, by the name server upon request,

the pool name to a Name Resolution List (name to address translation service), the

Name Resolution List comprising address information, including at least an IP address

(name to address), related to one or more of the pool elements, sending the Name

Resolution List by the name server to the pool user, accessing, by the pool user and

based on the address information from the Name Resolution List, one of the pool

elements of the server pool for making use of the service (Para 16 lines 7-15).

Lakshmi Narayanan does not disclose a method wherein status information

related to the operational status of at least one of the pool elements is sent from the

name server to the pool user, the pool user determines a status vector comprising

status information related to an availability of one or more of the pool elements and the

status vector determined by the pool user is updated by the status vector received from

the name server and the status information related to the availability is determined by

the expiry or non-expiry of one or more timers related to message transmission

between the pool user and the one or more of the pool elements in one of an

application layer and a transport layer. However Parham et al discloses a method

wherein status information related to the operational status of at least one of the pool

elements is sent from the name server to the pool user, the pool user determines a

status vector comprising status information related to an availability of one or more of

the pool elements and the status vector determined by the pool user is updated by the

status vector received from the name server and the status information related to the

availability is determined by the expiry or non-expiry of one or more timers related to

message transmission between the pool user and the one or more of the pool

elements in one of an application layer and a transport layer (Col 2 lines 34-40 and Col

3 lines 43-47 and Col 7 lines 9-12 teaches of using a vector table in which the state of

all the servers in the pool is recorded. It also teaches of using the last successful

replication timestamp to monitor server and differentiate between functioning server

and non functioning servers). It would have been obvious to one having ordinary skill in

the art at the time of the invention to use the name space resolution method of Lakshmi

Narayanan et al. with the status vector method of Parham et al. in order to have a

system for load sharing in a reliable server pool.

Re claim 2, note that Parham et al. discloses a method, wherein the status

information represents a timestamp indicating a point of time at which the status of one

of the pool elements is determined (Col 7 lines 4-13).

Re claim 4, Lakshmi Narayanan et al. in view of Parham et al. discloses the

claimed invention as set forth in claim 2 above. Lakshmi Narayanan et al. in view of

Parham et al. does not disclose a method, wherein the status information comprises a

positive number, representing the timestamp, if said one of the pool elements is in an

up-status and the status information comprises a negative number, representing the

timestamp with a minus sign, if said one of the pool elements is in a down-status.

However Lakshmi Narayanan et al. in view of Parham et al. does disclose using

timestamps in order to differentiate between a functioning and a non-functioning server

(Col 2l lines 34-38 and Col 7 lines 9-13). Using positive and negative number to

indicate the up status and down status of a server respectively is a matter of design

choice. It would have been obvious to one having ordinary skill in the art to use the

timestamp technique of Lakshmi Narayanan et al. in view of Parham et al. in order to

have a system for load sharing in a reliable server pool.

Re claim 5, note that Lakshmi Narayanan et al. discloses a method, wherein the sending of the request by the pool user to the name server is performed by sending a name Resolution Message, the sending being triggered within the pool user to accomplish cache population (Para 18 lines 7-11 teaches pool user sending a request to the name server to get the pool handle for the server).

Re claim 6, note that Lakshmi Narayanan et al. discloses a method, wherein sending the name Resolution List by the name sewer (NS) to the pool user (PU) comprises sending a name Resolution Response Message, which further comprises the status information, whereby the status information is inserted into the name Resolution Response Message as a status vector (Para 29 lines 1-6 teaches that the list retuned by the name server to the client, contains the status of the legacy servers.)

Re claim 7, note that Lakshmi Narayanan et al. discloses a method, wherein a particular one of the pool elements in the server pool is selected for the server function, based on the status information in the status vector received from the name server (Para 19 lines 7-12).

Re claim 8, note that Parham et al. discloses a method, wherein the status vector determined by the pool user is updated by replacing status information with corresponding status information of the status vector received from the name server, if the corresponding status information is indicated to be more up-to-date (Col 7 lines 35-38 teaches if new information is available about the servers of the server pool, the status vector table of the corresponding server entry in the status vector table, is updated with the new status value).

Re claim 9, note that Lakshmi Narayanan et al. discloses a method, wherein in selecting a particular one of the pool elements in the server pool, by the pool user, a server selection policy is applied (Para 30 lines 16-18).

Re claim 10, Lakshmi Narayanan et al. discloses a name server, for managing and maintaining a name space for a server pool (Para 18 line 6 server pool) with one or more pool elements (Para 18 line 1 physical elements) for providing a reliable server function in support of a service, the name server comprising: a pool resolution server module (Para 18 line 3 ENRP name server) to receive a name Resolution Message request according to the IETF ASAP protocol (Para 18 line 2 ASAP and Para 15 line 5) , indicating the pool name, and a memory to store address information, including an IP address (Para 15 lines 5-10 teaches about name based addressing module which isolates the IP address. Its obvious that a memory unit is involved to store the IP address related to the name based addressing), related to the pool elements associated to a pool name identifying the server pool, the pool resolution server module being adapted to resolve, in response to the request, the pool name to a name Resolution List by accessing the memory and extracting the address information associated to the pool name thereof, and to assemble a message comprising the Name Resolution List according to the IETF ASAP protocol, and to send the message to the sender of the request (Para 18 lines 7-11 and Para 19 lines 7-12 teaches, sending a request to the name server, upon which the name server sends a list of RSerPool physical elements to the client using the ASAP Protocol), wherein the memory is further adapted to store status information associated to one or more of the

pool elements and the pool resolution server module is further adapted to access, in

response to the request, the memory to extract the status information, and to send the

status information back to the sender of the request, preferably by inserting the status

information into the message (Para 29 lines 1-6 teaches that the return list has the

status information of the servers). Lakshmi Narayanan et al does not disclose a

method, wherein inserting the status information into the message as a status vector.

However Parham et al. discloses a method, wherein inserting the status information

into the message as a status vector (Col 3 lines 26-29 teaches of a vector table that

has all relevant information about the servers). It would have been obvious to one

having ordinary skill in the art at the time of the invention to use the name space

resolution method of Lakshmi Narayanan et al. with the status vector method of

Parham et al. in order to have a system for load sharing in a reliable server pool.

 Re claim 13, note that Parham et al. discloses the name server, wherein the

element status module is adapted to write as the status information a number

representing a timestamp (Col 3 lines 43-46 and Col 7 lines 9-13 teaches of using

timestamps to indicate the availability of server, but to choice of using a number

instead of the actual time is purely a design element and has no effect on the

functionality of the system).

 Re claim 13, Lakshmi Narayanan et al. discloses a pool user device (See Fig 2

items 120, 110, 115 and 131 all comprises to form a pool user device) for making use

of a server function in support of a service which can be provided by each one of one

or more pool elements (Para 18 line 1 physical elements) of a server pool (Para 18

lines 6 sever pool), the pool user device comprising: a pool resolution client module to assemble a request, according to the IETF ASAP protocol indicating a pool name identifying the server pool, to send this request to a name server and to receive a message comprising a name resolution list, according to the IETF ASAP protocol from the name server, a server selection module to access, based on address information from the name resolution list, a particular one of the pool elements of the server pool for making use of the service (Para 18 lines 7-11 and Para 19 lines 4-12 teaches client 31 uses ASAP protocol to request the name server the name list of the pool elements. It also teaches the name server returning a list of physical element as per the ASAP protocol. The art does not explicitly teaches a pool resolution client module but its obvious that in order to generate a request as per the ASAP protocol and to receive the response list as per the ASAP protocol the client must have access to a pool resolution client module in order to communicate with the name server which could be resident inside the name server itself), wherein the pool resolution client module is further adapted to receive the message comprising a status or and the server selection module is further adapted to access the particular one of the pool elements in response to status information and that resolution client module is adapted to determine status information related to an availability of one or more of the pool elements (Para 19 lines 7-12 teaches the selection of one of the server in response to receiving the list from the name server). Lakshmi Narayanan et al. does not disclose a user pool device wherein the pool resolution client module is further adapted to receive the message comprising a status vector and the server selection module is further adapted to access the

particular one of the pool elements in response to status information included in the status vector and that resolution client module is adapted to determine a status vector comprising status information related to an availability of one or more of the pool elements and to update the status vector determined by the pool user by the status vector received from the name server and the pool resolution client module is adapted to determine the status information related to the availability by the expiry or non-expiry of one or more timers related to message transmission between the pool user and the one or more of the pool elements in one of an application layer and transport layer. However Parham et al. discloses a user pool device wherein the pool resolution client module is further adapted to receive the message comprising a status vector and the server selection module is further adapted to access the particular one of the pool elements in response to status information included in the status vector and that resolution client module is adapted to determine a status vector comprising status information related to an availability of one or more of the pool elements and to update the status vector determined by the pool user by the status vector received from the name server and the pool resolution client module is adapted to determine the status information related to the availability by the expiry or non-expiry of one or more timers related to message transmission between the pool user and the one or more of the pool elements in one of an application layer and transport layer (Col 3 lines 43-47 and Col 7 lines 6-16 lines 35-38 teaches of using a vector table the has status information of each server in the server pool. The vector table uses timestamps to determine the updates to the server as well as the availability of the servers. The vector tables are

modifiable and are modified whenever the most update status of the servers is available). It would have been obvious to one having ordinary skill in the art at the time of the invention to use the name space resolution method of Lakshmi Narayanan et al. with the status vector method of Parham et al. in order to have a system for load sharing in a reliable server pool.

Re claim 14, note that Parham et al. discloses a pool user device wherein by a memory to store status information, preferably a status vector, where the pool resolution client module and the server selection module are adapted to write and read, respectively, the status information (Col 7 lines 35-38 teaches the vector tables are modifiable and is modified whenever the most update status of the servers are available).

Re claim 15, note that Parham et al. discloses a pool user device, further comprising a server availability module to determine status information related to an availability of one or more of the pool elements and to access the memory to write the status information thereto.(Col 7 lines 35-38 teaches the vector tables are modifiable and is modified whenever the most update status of the servers are available).

Re claim 16, note that Parham et al. discloses a pool user device, wherein the server selection module is adapted to update the status vector written by the server availability module to the memory by the status vector received by the pool resolution client module. (Col 7 lines 35-38 teach the vector tables are modifiable and are modified whenever the most update status of the servers is available).

Re claim 17, Lakshmi Narayanan et al discloses a pool user device, wherein in

selecting a particular one of the pool elements in the server pool (SP), by the server

selection module a server selection policy is applied (Para 30 lines 16-18).

7.   Claims 3,11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Lakshmi Narayanan et al. (US 2003/0115259) in view of Parham et al (7,035,922)

in further view of Schroeder et al (5,088,091).

Re claim 3, Lakshmi Narayanan et al. in view of Parham et al. disclose the

claimed invention as set forth in claim 2 above. Lakshmi Narayanan et al. in view of

Parham et al. does not disclose a method, wherein the status of said one of the pool

elements is determined based on a Keep-Alive-Acknowledgement-Message received

by the name server from the one of the pool elements in response to a Keep-Alive-

Message sent by the name server to the one of the pool elements or a local timer

expiry notification at the name server due to a missing Keep-Alive-Acknowledgement-

Message from one of the pool elements, the Keep-Alive-Acknowledgement-Message

and the local timer expiry notification indicating the status of the one of the pool

elements, for example as being up and down, respectively. However Schroeder et al.

discloses a method, wherein the status of said one of the pool elements is determined

based on a Keep-Alive-Acknowledgement-Message (acknowledgement message)

received by the name server from the one of the pool elements in response to a Keep-

Alive-Message (Keep Alive Message) sent by the name server to the one of the pool

elements or a local timer expiry notification at the name server due to a missing Keep-

Alive-Acknowledgement-Message from one of the pool elements, the Keep-Alive-

Acknowledgement-Message and the local timer expiry notification indicating the status

of the one of the pool elements, for example as being up and down, respectively (Col

37 5-14 and lines 18-20 teaches an availability of the a remote network member is

determined by sending a keep live message and receiving an acknowledgement for the

keep live acknowledgement message to determine if the member is live). It would have

been obvious to one having ordinary skill in the art at the time of the invention to use

the name space resolution method with the status vector of Lakshmi Narayanan et al in

view of Parham et al. with the Keep Alive Acknowledgement method of Schroeder et

al. in order to have a system for load sharing in a reliable server pool.

Re claim 11, Lakshmi Narayanan et al. in view of Parham et al. disclose the

claimed invention as set forth in claim 10 above. Lakshmi Narayanan et al. in view of

Parham et al. does not disclose a name server, wherein an element status module is

provided to assemble a Keep-Alive-Message according to the IETF ASAP Protocol,

and to send the Keep-Alive-Message to one of the pool elements, and to receive a

Keep-Alive-Acknowledgement-Message or to receive a local timer expiry notification,

according to the IETF ASAP Protocol, from one of the pool elements and, in response

to this reception, to access the memory to write status information indicating the status

of said one of the pool elements, as being up or down, respectively. However

Schroeder et al. discloses a name server, wherein an element status module is

provided to assemble a Keep-Alive-Message according to the IETF ASAP Protocol,

and to send the Keep-Alive-Message to one of the pool elements, and to receive a

Keep-Alive-Acknowledgement-Message or to receive a local timer expiry notification, according to the IETF ASAP Protocol, from one of the pool elements and, in response to this reception, to access the memory to write status information indicating the status of said one of the pool elements, as being up or down, respectively (Col 37 5-14 and lines 18-20 teaches an availability of the a remote network member is determined by sending a keep live message and receiving an acknowledgement for the keep live acknowledgement message to determine if the member is live).). It would have been obvious to one having ordinary skill in the art at the time of the invention to use the name space resolution method with the status vector of Lakshmi Narayanan et al in view of Parham et al. with the Keep Alive Acknowledgement method of Schroeder et al. in order to have a system for load sharing in a reliable server pool.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AJAY P. CATTUNGAL whose telephone number is (571)270-7525. The examiner can normally be reached on Monday- Friday 7:30 - 5:00, Alternating Fridays OFF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jinhee Lee can be reached on 571-292-1977. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. P. C./   /Yemane Mesfin/
Examiner, Art Unit 4173   Examiner, Art Unit 2444